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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,652	10/02/2001	James Claude Carnahan	RD-28048	5249
6147	7590	05/05/2004	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 SCHENECTADY, NY 12301-0008			QUAN, ELIZABETH S	
			ART UNIT	PAPER NUMBER
			1743	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,652

Applicant(s)

CARNAHAN ET AL.

Examiner

Elizabeth Quan

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 22-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/5/01 & 1/7/02.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-21, drawn to a reaction system, classified in class 422, subclass 99.
 - II. Claims 22-25, drawn to a method of performing analytical chemical studies, classified in class 436, subclass 37.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus since the method of claim 22 does not recite the particulars of the apparatus of claim 1.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Art Unit: 1743

6. During a telephone conversation with Andrew Caruso on 4/27/2004 a provisional election was made without traverse to prosecute the invention of II, claims 22-25. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

8. The information disclosure statement filed 10/5/2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Only odd pages of pages 305-354 of the article "Infrared, Raman, near-infrared, and ultraviolet spectroscopy" are present. The figures and some of the words of the article "Synthesis of Pentacoordinate Silicon Complexes from SiO₂" are missing.

9. The information disclosure statement filed 10/5/2001 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. "Uber

Art Unit: 1743

innerkomplexe Brenzcatechinate vierwertiger Elemente" has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is unclear how the sealed reaction vessel is adapted to allow chromatographic studies of the reaction. It does not appear possible that chromatographic analysis can be conducted within a sealed reaction vessel. The specification does not discuss how chromatography is performed in the sealed reaction vessel.

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

13. Claims 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Claim 22 provides for the use of closed reaction vessels, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is

Art Unit: 1743

intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 22 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim 23 is rejected as being dependent on base claim 22.

15. Claim 24 recites the limitation "the container" in the last line. There is insufficient antecedent basis for this limitation in the claim. Additionally, it is unclear whether it was intended that the claim recite combining the reagent and catalysts when the reaction vessel is sealed. If this is the case, there appears to be no support since the instant specification discloses that the reagents are added and then the reaction vessel is sealed. Otherwise, claim is rendered indefinite based on unclear language. Furthermore, it is unclear how the sealed reaction vessel is adapted to allow spectral, chromatographic, or other quantitative or qualitative studies. What structure makes the reaction vessel adapted to allow spectral, chromatographic, or other quantitative or qualitative studies? It is unclear whether it was intended that the claim recite that the studies are conducted when the reaction vessel is sealed. Claim 25 is rejected as being dependent on base claim 24.

16. Claims 22 and 24 are rendered indefinite since the preamble recites performing analytical chemical studies or analysis of a chemical reaction when these claims do not recite any active step of performing analytical chemical studies or analysis.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0 354 726

A1 to Kimber et al.

Kimber et al. disclose a method of analyzing a chemical reaction in real time (pages 1-3). A predetermined quantity of Tetralin and catalyst are combined within a sealed reaction vessel (10) since one would expect that there would be natural mixing occurring between Tetralin and catalyst after sealing the reaction vessel (page 2, lines 25-30; page 3, lines 6-14). The chemical reaction is analyzed by gas liquid-chromatography or ¹H-nuclear magnetic resonance (page 2, lines 6 and 7; page 3, lines 2, 3, 24, and 25). The reaction vessel is considered to be adapted to allow spectral or other quantitative or qualitative studies of the reaction within the reaction vessel. Both the reaction vessels of Kimber et al. and instant application are made of metal. In the instant specification fittings with transparent windows allow spectral and chromatographic analysis of the reaction within metal reaction vessels. The metal reaction vessels of Kimber et al. are capable of being capped by the fittings with windows, such that the reaction vessels are adapted to allow spectral or other quantitative or qualitative studies of the reaction within the vessels. Furthermore, the reaction vessel is adapted to such studies since it may be uncapped for direct analysis or transfer of products to another destination for analysis. The reaction vessel is heated to a reaction temperature within a small temperature band within the range of 543 K to

Art Unit: 1743

693 K with the exact choice of the band being matched to the catalyst (page 3, lines 16-18, 23, and 24).

19. Claims 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,063,633 to Willson, III.

Willson, III discloses a method of analyzing a chemical reaction in real time (figs. 11-13; examples 12-16). A predetermined quantity of reactants and catalysts are combined within a sealed reaction vessel (150,168) (examples 12-16). Furthermore, upon inserting the microtiter plate within the reaction vessel, mixtures of gases are fed into the reaction vessel at a controlled temperature (examples 12-16). One would expect the reaction vessel is sealed since gases are introduced at controlled temperatures. The chemical reaction is analyzed by an infra-red sensitive camera (14,145,170) through infra-red-transparent sapphire windows (16,172) (page 2, lines 6 and 7; page 3, lines 2, 3, 24, and 25). Both the reactor and feed temperatures are controlled (examples 12-16).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

Art Unit: 1743

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

23. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,063,633 to Willson, III.

Willson, III does not explicitly disclose that the reaction vessel is sealed. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reaction vessel sealed to keep the gases within the reaction vessel to prevent contamination and provide control over how much gas is being fed into the reaction and effectively control the temperature within the reactor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (571) 272-1261. The examiner can normally be reached on M-F (8:00-4:30).


Art Unit: 1743

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Quan
Examiner
Art Unit 1743

eq


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